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Timothy G. Offerle

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ARTZ & ARTZ, P.C.

28333 TELEGRAPH ROAD, SUITE 250
SOUTHFIELD, MI 48034

EXAMINER

SCHWARTZ, CHRISTOPHER P

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/708,676
Filing Date: March 18, 2004
Appellant(s): OFFERLE ET AL.

MAILED

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GROUP 3600

Jerome R. Drouillard
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 3, 2006 appealing from the Office action mailed November 30, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,579,228	Kimbrough et al.	11-1996
5,747,683	Gerum et al.	5-1998
6,801,125	McGregor et al.	10-2004
6,838,979	Deng et al.	1-2005
US 2002/0107627	Funke et al.	8-2002

US 2002/0145663

Mizusawa et al.

10-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-12,14,15,32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US publication to Mizusawa et al. '663 in view of McGregor et al.

Regarding claim 1 Mizusawa et al. discloses a system for controlling the positioning of a trailer with respect to a towing vehicle, as discussed in paragraphs 5,12,33, and 48. The system uses a multitude of cameras positioned on the left and right sides of the vehicle, which may be any of those listed in paragraph 35.

The reference to Mizusawa et al. lacks using a trailer sensor during a forward motion of the vehicle to determine “a straight position” of the trailer.

McGregor et al. Teaches it is widely known to use sensors to determined the alignment of the ball and socket connectors i.e a “straight” position of the trailer. See the discussion in col 1 lines 43-50. McGregor et al. instead uses HD or hitch docking sensors, as discussed in columns 2 and 3.

It is notoriously well known in the art to use such hitch angle sensors to determine a “straight position of the trailer” during forward and backward motion to prevent the possibility of the trailer jackknifing or collisions with other objects. Although not applied, see the cited references to Gerum et al., Lee et al., Kimbrough et al., the U.S. publication to Funke et al. and Deng et al. '979.

It would have been an obvious alternative equivalent method of aligning the trailer with respect to the tow vehicle socket by providing Mizusawa et al. with a hitch or trailer sensor, as taught by McGregor et al. so that the ball of the hitch may be mated to the hole/socket dependent upon such well known criteria as complexity of installation and costs. As broadly claimed, (notwithstanding the non-applied art above) this could also be done when the driver pulls the vehicle forward to line up the hitch with the socket on the trailer. The limitation of “controlling the vehicle to maintain the trailer in the straight position” as broadly claimed can be easily achieved by the driver (and mirror system on the vehicle) alone.

Regarding claim 3, see the discussion in McGregor et al. col 3 lines 23-28. Note also the multitude of sensors discussed in col. 3 of McGregor et al., such as the well

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known collision avoidance sensors. Other sensors are proximity sensors that an sound an audible alarm. Any of these known sensors could be used in the device of Mizusawa et al. for a "reverse aid sensor", as broadly claimed.

Regarding claims 4-6 these requirements are fairly suggested by the combined references above. Just about any "hitch" assembly on a trailer will comprise a ball and socket combination, and dependent upon the type of trailer, a "locating plate" as broadly claimed. Note the camera discussed on page 3 paragraph 48 of Mizusawa et al.

Regarding claim 7, as best understood, these requirements are taught by the combined references.

Regarding claim 8, see the discussion in col. 2 lines 25 of McGregor et al. To have used such a steering angle sensor in the device of Mizusawa et al. would have been an obvious lower cost alternative to the camera set up of Mizusawa et al., or an obvious addition for redundancy purposes (should a camera fail).

Regarding claims 9-12 since nearly all vehicles have a "shift lever" to control the operating condition of the transmission and therefore the direction of the vehicle and trailer, and linked to the vehicles reverse lights, these requirements, as broadly claimed, are considered to be taught by the combined references.

Regarding claims 14,15 nearly all vehicles are equipped with turn signal levers that enable the driver to "select" a direction.

Regarding claims 32-35, as discussed above, these requirements are met.

4. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over US publication to Mizusawa et al. '663 in view of McGregor et al. as applied to claim 9 above, and further in view of US publication to Thiede et al.

Regarding claim 13 wheel speed sensors that are capable of indicating direction as well as speed are notoriously well known in the art. Some types of Hall effect sensors can do this. Thiede et al. is relied upon for this teaching in paragraph 9.

5. Claims 17-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over US publication to Mizusawa et al. '663 in view of McGregor et al. and Gerum et al.

Regarding claim 17 Mizusawa et al. '663 in view of McGregor et al. is relied upon as above. McGregor et al. Teaches in col. 2 a known type of steering actuator 38 in mechanical communication with a transverse steering bar 40 which controls the steering angle of the rear wheels 19. This known device could easily be used in Mizusawa et al. '663. However no clear mention of "brake steer" is made in either reference.

This idea is old and well known in the art to increase maneuverability at low speeds. This known idea is taught by Gerum et al. in col. 4 lines 48-55 and claims 9 and 10.

It would have been obvious to have applied the notoriously well known concept of brake steer to the axle/wheels of the vehicle and/or trailer for Mizusawa et al., as modified, for the reason above.

Regarding claims 18-31 these requirements are suggested by the combined references as explained above. Note the control unit 30 and dashboard control 46 discussed in McGregor et al. col. 2. lines 56+.

(10) Response to Argument

Appellant's remarks have been fully considered. With respect to **claim 1** appellant's limitations are extremely broad. Appellant's simply claim a method of determining a straight position of the trailer using a sensor and then controlling the vehicle to maintain the trailer in the straight position.

The limitation of "controlling the vehicle to maintain the trailer in the straight position" could be done by the driver alone. A "straight alignment" between the towing and trailer vehicles is desired a high percentage of the time, while the vehicles are under motion, for the simple reason of avoiding collision with other objects or vehicles and to avoid instability of the vehicle combination.

The publication to Mizusawa et al. uses a camera system to check the positional alignment between the hitch on the tow vehicle and the coupler on the trailer. As stated in the abstract the system "... displays a synthesized image that is obtained by image processing ... wherein a hitch image of [the tow vehicle] in addition to an image 41a of a **trailed vehicle** and an image of the coupler are displayed on a screen displaying means". This system would therefore enable a driver to at least align the vehicle with the trailer while moving the vehicle forward – from a parked condition in a parking lot or out of a garage or other tight area where clearance is minimal.

The reference to McGregor et al. is relied upon to teach another well known alternative method of aligning the tow vehicle/trailer hitch connection – namely that of using HD or hitch docking sensors. Note the alternative listed in columns 2 and 3.

McGregor et al. Also uses a control unit 30 and a brake-steering actuator assembly 36,38 for improving the driveability and manoeuvrability of the vehicle combination.

The combination of these references clearly suggest the limitation of using a trailer sensor to determine a straight position of the trailer during forward motion of the vehicle combination and controlling the vehicle to maintain the trailer in the straight position. As explained above said latter controlling step could be accomplished by the driver using either the camera system, the vehicles' mirrors, and/or a combination of both for the expected benefit of maintaining a safe vehicle orientation.

With respect to **claim 32** appellant's limitations to the locating plate (on the trailer) having a locating hole the examiner maintains such an arrangement is an obvious alternative to the many tow vehicle/trailer hitch connections known in the art. Since the references above clearly teach a method of aligning the coupling arrangement between the respective tow and trailer vehicles the limitations are considered to be obvious.

With respect to **claim 17** and appellant's broad limitations to a "secondary steering actuator" – which generates a signal of a desired trailer turn direction—this could be a number of different elements in the combined teachings of the references above. It could be a yaw or other sensor providing a signal to a brake controller to limit the threat of a jackknife condition. It could simply be a left or right turn signal providing a signal to the controller, or it could be any or a combination of the components of the sensor- brake steering arrangement taught by McGregor et al. discussed in column 2 lines 27-61 for increased stability of the vehicle combination when under motion.

Given the undue breadth of appellant's claimed limitations the rejections of the claims over the references above should be sustained.

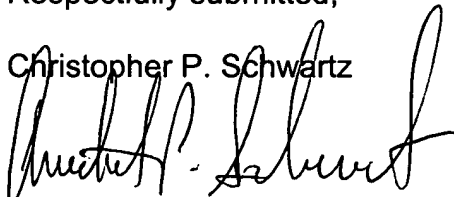
(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

Christopher P. Schwartz



Conferees:

Cps 

Tjw 

Jm 

CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER